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94.12.08 94DE-4443641 *(96.06.13)* C07C 251/48, A01N 37/50, 43/40, 43/54, C07C 255/44, C07D 285/08, 417/04, 239/34, C07C 251/60, A01N 43/82, C07C 69/734

**New aromatic and araliphatic carboxamide cpds. - useful as fungicides in plant protection, esp. for control of cereal, fruit and vegetable diseases (Ger)**

**C96-091791** N(AU BB BG BR BY CA CN CZ FI HU JP KR KZ LK MX NO NZ PL RO RU SK UA US) R(AT BE CH DE DK ES FR GB GR IE IT LU MC NL OA PT SE)

Addnl. Data: SEITZ T, HEINEMANN U, STENZEL K, DUTZMANN S

95.11.27 95WO-EP04668

Substd (hetero)aryl and (hetero)aralkyl carboxamides of formula (I) are new.

$$Z\text{-}G\text{-}Ar^1\text{-}E\text{-}CO\text{-}N(A^1)\text{-}[C(A^2)(A^3)]_m\text{-}Ar^2 \qquad (I)$$

$A^1$, $A^2$ = H or alkyl;
$A^3$ = H, alkyl or CN;
$Ar^1$ = opt. substd. arylene or heteroarylene;
$Ar^2$ = opt. substd. aryl or heteroaryl;

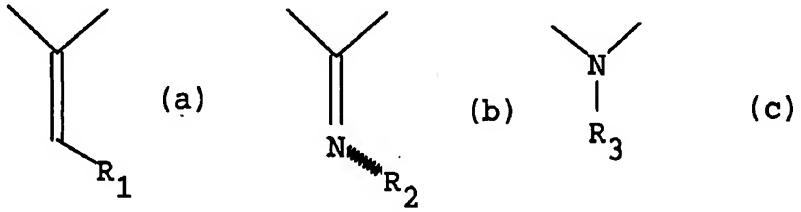
C(7-H, 10-D3, 14-A6) .3

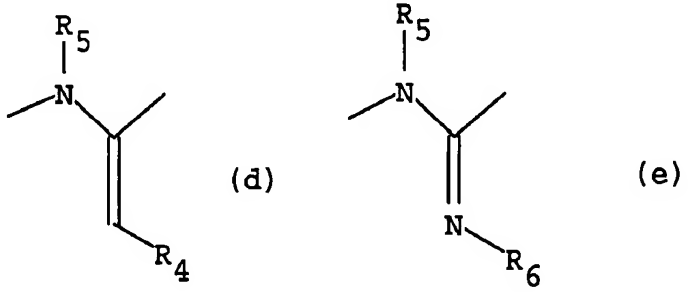
E = 2-$R^1$-1-alkene-1,1-diyl, 2-aza-2-$R^2$-1-alkene-1,1-diyl, $NR^3$, 3-aza-1-$R^4$-3-$R^5$-1-propene- 2,3-diyl, 3-(aza or thia)-1-$R^4$-1-propene-2,3-diyl, 1-aza-1-($R^4$ or $R^6$)-3-$R^5$-1-propene-2,3-diyl, 1,3-diaza-1-$R^6$-3-$R^5$-1-propene,2,3-diyl, or 1-aza-3-(oxa or thia)-1-$R^6$-1-propene-2,3-diyl;
$R^1$, $R^4$ = alkyl, alkoxy, alkylthio, alkylamino or dialkylamino (all opt. substd.), H, halo or CN;
$R^2$, $R^6$ = alkyl, alkoxy, alkylamino or dialkylamino (all opt. substd.), H, $NH_2$ or CN;
$R^3$ = alkyl, alkenyl, alkynyl, cycloalkyl or cycloalkylalkyl (all opt. substd.), H or CN;
$R^5$ = alkyl;
G = alkanediyl, alkenediyl or alkynediyl (all opt. substd. by halo, OH, haloalkyl or cycloalkyl), bond, O, S, -Q-CQ-, -CQ-Q-, -$CH_2$-Q-, -Q-$CH_2$-, -CQ-Q-$CH_2$-, -$CH_2$-Q-CQ-; -Q-CQ-$CH_2$, -Q-CQ-Q-$CH_2$-, -N=N-, -$S(O)_n$-, -$CH_2$-$S(O)_n$-, -CQ-, -$S(O)_n$-$CH_2$-, -$C(R^7)$=N-O-, -$C(R^7)$=N-O-$CH_2$-, -$N(R^8)$-, -CQ-$N(R^8)$-, -$N(R^8)$-CQ-, -Q-CQ-$N(R^8)$-, -N=$C(R^7)$-Q-$CH_2$-, -$CH_2$-O-N=$C(R^7)$-, -$N(R^8)$-CQ-Q-, -CQ-$N(R^8)$-CQ-Q-, -$N(R^8)$-CQ-Q-$CH_2$-, -Q-$C(R^7)$=N-O-$CH_2$- or -

$N(R^8)$-$C(R^7)$=N-O-$CH_2$-;
m, n = 0-2;
Q = O or S;
$R^7$ = alkyl, alkoxy, alkylthio, alkylamino, dialkylamino or cycloalkyl (all opt. substd.), H or CN;
$R^8$ = alkyl, alkoxy or cycloalkyl (all opt., substd.), H, OH or CN;
Z = alkyl, alkenyl, alkynyl, cycloalkyl, aryl or heterocyclyl (all opt. substd.).

MORE SPECIFICALLY
$R^1$, $R^4$ = T", OT", ST", NHT", NT"$_2$, H, halo or CN;
$R^2$, $R^6$ = T", OT", ST", NHT", NT"$_2$, H, halo or CN;
$R^3$ = 2-6C alkenyl, $2_6$C alkynyl (both opt. substd. as for T"), T", Cy-substd. 1-4C alkyl, H or CN;
T" = T (opt. substd. by halo, CN or OT')
T, $R^5$ = 1-6C alkyl;
T' = 1-4C alkyl;
Cy = 3-6C cycloalkyl (opt. substd. by halo, CN, COOH, T' or COOT');
G = 1-4C alkanediyl, 2-4C alkenediyl or 2-4C alkynediyl (all opt. substd. by halo, OH, T', 1-4C haloalkyl or 3-6C cycloalkyl), bond, O, S, -Q-CQ-, -CQ-Q-, -$CH_2$-Q-, -Q-$CH_2$-, -CQ-Q-$CH_2$-, -$CH_2$-Q-CQ-, -Q-CQ-$CH_2$, -Q-CQ-Q-$CH_2$-, -N=N-, -$S(O)_n$-, -$CH_2$-$S(O)_n$-, -CQ-, -$S(O)_n$-$CH_2$-, -$C(R^7)$=N-O-, -$C(R^7)$=N-O-$CH_2$-, -$N(R^8)$-, -CQ-$N(R^8)$-, -$N(R^8)$-CQ-, -Q-CQ-$N(R^8)$-, -N=$C(R^7)$-Q-$CH_2$-, -$CH_2$-O-N=$C(R^7)$-, -$N(R^8)$-CQ-Q-, -CQ-$N(R^8)$-CQ-Q-, -$N(R^8)$-CQ-Q-$CH_2$-, -Q-$C(R^7)$=N-O-$CH_2$- or -$N(R^8)$-$C(R^7)$=N-O-$CH_2$-;
$R^7$ = Cy, T", OT", ST", NHT", NT"$_2$, H, halo or CN;
$R^8$ = Cy, T", H, OH or CN;
Z = 1-8C alkyl (opt. substd. by 1 or more halo, CN, OH, $NH_2$, OT', ST', SOT' or $SO_2$T' (opt. substd. by halo)), 2-8C alkenyl (opt. substd. by halo), 2-8C alkynyl (opt. substd. by halo), 3-6C cycloalkyl (opt. substd. by one or more halo, CN, COOH, Ph, T', COOT'), or Ar;
Ph = phenyl (opt. substd. by halo, CN, T', 1-4C haloalkyl, 1-4C haloalkoxy or OT');
Ar = phenyl, naphthyl or 3-7-membered heterocycl contg. O, S or N and opt. 1 or 2 additional N (all opt. substd. by one or more $R^0$);
$R^0$ = halo, CN, $NO_2$, $NH_2$, OH, CHO, COOH, $CONH_2$, $CSNH_2$, $XR_a$, 2-6C alkenyl, 2-6C alkenyloxy (both opt. substd. by 1-13 halo), NHT, $NT_2$, COT, OCOT, COOT, $OSO_2$T, T (substd. by NHOH or NHOT), Cy, Alk, OAlkO, Het, $CH_2$Het or $Ar^3$;
Alk = 1-6C alkylene (opt. substd. by one or more halo, or T' (opt.

substd. by 1-9 halo));
X = bond, O, S, SO, $SO_2$;
Het = 3-7 membered heterocycle with 1-3 heteroatoms (esp. N, O S);
$Ar^3$ = pyridyl, thienyl, phenyl, phenoxy, phenylthio, benzyl, benzyloxy, benzylthio, phenylethyl or phenylethyloxy (all opt. ring-substd. by R");
R" = T', ST', OT' (all opt. substd. with 1-9 halo), halo, CN, Alk or OAlkO;
E = a gp. of formula (a)-(e).




USE

(I) are plant fungicides which are tolerated well by plants and which are esp. useful for the control of cereal diseases caused by various spp. including *Erysiphe, Leptosphaeria, Pyrenophora* and *Cochliobolus* spp. as well as diseases in fruit and vegetable crops caused by various spp. including *Podosphaera.*

Application rate is 0.001-50g/kg when used as a seed dressing.

ADVANTAGE

(I) are more effective than known substd. carboxamides (cf. e.g. EP 398692) and have esp. good activity in vitro.

PREPARATION

Claimed prepn. of (I) is as follows.

$$Z\text{-}G\text{-}Ar^1\text{-}E\text{-}COR + A^1\text{-}NH\text{-}[C(A^2)(A^3)]_m\text{-}Ar^2 \rightarrow (I)$$

(II) (III)

R = OH, halo or alkoxy.
(III) can be used as a hydrohalide and the reaction may be performed in the presence of an acid acceptor, condensation agent and/or diluent.

EXAMPLE

A mixt. of methyl 2-methoxyimino-2-[2-(2-methylphenoxy-methyl)-phenyl]-acetate (2.5 g) and 4-chlorobenzylamine (1.14 g) was stirred at 120 °C for 12 hrs., cooled, taken up in $CH_2Cl_2$, washed ($H_2O$, 1N HCl, then $H_2O$), dried ($Na_2SO_4$) and filtered. Concentration and chromatography ($SiO_2$; petroleum ether:EtOAc, 5:1) gave N-(4-chlorobenzyl)-2-methoxyimino-2-[2-(2-methylphenoxymethyl)-acetamide (1.4 g; 42% yield); oil.

Typical cpds. (I) applied at 250 g/ha gave 100% protection to wheat and barley from attack by Erysiphe graminis and also gave 100% kill of this fungus on the same cereals. When used in concns. of 20 ppm, cpds. also gave 89-97% protection to apples from attack by Podosphaera leucotricha. (LJ)

(83pp2101DwgNo.0/0)

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